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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,826	02/24/2004	Hajime Maki	Q79934	8486

23373 7590 03/01/2006

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
VANOY, TIMOTHY C	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/784,826	MAKI ET AL.	
	Examiner	Art Unit	
	Timothy C. Vanoy	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 24 February 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 07/28/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by the article titled "Nanocorundum – Advanced Synthesis and Processing" by Krell et al.

The Krell et al. article on pg. 1143, 5th full paragraph describes a process for making alpha alumina, comprising:

Proving high purity aluminum nitrate;

Providing alpha alumina seeds, and

Calcining at 900 °C to (evidently) produce the alpha alumina.

On pg. 1146 in figure 2(c), an example is shown where the seeds used are diaspore and the calcination is done at 850 °C to produce the alpha alumina.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the article titled "Nanocorundum – Advanced Synthesis and Processing" by Krell et al.

The Krell et al. article on pg. 1143, 5th full paragraph describes a process for making alpha alumina, comprising:

Proving high purity aluminum nitrate;

Providing alpha alumina seeds, and

Calcining at 900 °C to (evidently) produce the alpha alumina.

On pg. 1146 in figure 2(c), an example is shown where the seeds used are diaspore and the calcination is done at 850 °C to produce the alpha alumina.

The difference between the applicants' claims and the Krell et al. article is that applicants' claims 8 and 9 describe the specific surface area of the seed crystals.

The seed crystals that the applicants are using and Krell et al. are using are the same: diaspore (please compare the example set forth in figure 2(c) on pg. 1146 in the Krell et al. article with applicants' claim 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to further describe the surface area of the seed crystals, as set forth in applicants' claims 8 and 9, because the applicants and Krell et al. are using the same seed crystals, namely diaspore: please compare the example set forth in figure 2(c) on pg. 1146 in the Krell et al. article with applicants' claim 7. The same diaspore will inherently have the same surface area. Since this difference is inherently met in the

process of the Krell et al. article, then these claims are rejected under 35USC102 – as well as 35USC103.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 11-079,163. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of both 10-784,826 and 11-079,163 disclose obvious variations of the same method for producing alpha alumina by mixing an aluminum compound with seed crystals and calcining the mixture.

The difference between the claims of 10-784,826 and 11-079,163 is that claim 1 in 11-079,163 further describes the seed crystals as having a full width at half maximum of the main peak in the XRD pattern.

Claim 3 in 11-079,163 sets forth that the metal compound that forms the seed crystals may be alpha Al_2O_3, alpha Fe_2O_3, alpha Cr_2O_3 or diaspore.

Claim 7 in 10-784,826 sets forth that the seed crystals may be alpha Al_2O_3, diaspore, iron oxide, chromium oxide or titanium oxide.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to further describe the XRD pattern characteristics of the seed crystals, as set forth in claim 1 in 11-079,163, because a comparison of claim 3 in 11-079,163 to claim 7 in 10-784,826 reveals that both 11-079,163 and 10-784,826 are using the same seed crystals, and the same seed crystals will inherently have the same XRD pattern characteristics as those set forth in claim 1 in 11-079,163.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-9 are directed to an invention not patentably distinct from claims 1-14 of commonly assigned 11-079,163. Specifically, the claims of both 10-784,826 and 11-079,163 disclose obvious variations of the same method for producing alpha alumina by mixing an aluminum compound with seed crystals and calcining the mixture.

The difference between the claims of 10-784,826 and 11-079,163 is that claim 1 in 11-079,163 further describes the seed crystals as having a full width at half maximum of the main peak in the XRD pattern.

Claim 3 in 11-079,163 sets forth that the metal compound that forms the seed crystals may be alpha Al_2O_3, alpha Fe_2O_3, alpha Cr_2O_3 or diaspore.

Claim 7 in 10-784,826 sets forth that the seed crystals may be alpha Al_2O_3, diaspore, iron oxide, chromium oxide or titanium oxide.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to further describe the XRD pattern characteristics of the seed crystals, as set forth in claim 1 in 11-079,163, because a comparison of claim 3 in 11-079,163 to claim 7 in 10-784,826 reveals that both 11-079,163 and 10-784,826 are using the same seed crystals, and the same seed crystals will inherently have the same XRD pattern characteristics as those set forth in claim 1 in 11-079,163.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 11-079,163, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon

the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

The following references, which are indicative of the state of the art, are made of record:

U. S. Pat. App'n. Pub. No. US 2005/0214201 A1 disclosing a method for making alpha alumina by mixing seed crystals with an aluminum compound, and calcining the mixture (please see the abstract);

U. S. Pat. App'n. Pub. No. US 2005/0204513 A1 disclosing a method in which a powdery mixture of an aluminum salt and seed crystals are calcined (please see the abstract);

U. S. Pat. App'n. Pub. No. US 2005/0201928 A1 disclosing the calcination of a mixture of alumina and a pyrolyzable salt to produce alpha alumina (please see the abstract);

U. S. Pat. App'n. Pub. No. US 2005/0008565 A1 disclosing the calcination of a mixture comprising alpha alumina precursor; seed crystals and nitrate ions (please see the abstract);

U. S. Pat. 6,162,413 disclosing that the primary particle size of the alpha alumina can be controlled by the addition of seed crystals to the aluminum hydroxide (please see col. 3 lines 38-40);

U. S. Pat. 5,935,550 disclosing that the primary particle size of the alpha alumina obtained can be controlled by the number of seed crystals to be added (please see col. 5 lines 8-11);

U. S. Pat. 4,308,088 disclosing that calcination is effected in the presence of seed crystals, such as Al_2O_3 monocrystals (please see col. 2 lines 66-67), and

JP 6-144,830 disclosing the calcination of seeds and precipitated $Al(OH)_3$.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Timothy C Vanoy
Timothy C Vanoy
Patent Examiner
Art Unit 1754

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